

**WHAT IS CLAIMED IS:**

1. An improvement on a feeding mechanism of an automatic pipe bending machine, comprising

5       a main part for securing a pipe thereto; the main part being displaceable along a plurality of guide rails secured on a main body of the bending machine;

        a first power source fitted to the main part;

        a transmission connected to the first power source such that a gear  
10       thereof will rotate when the first power source operates;

        a rack securely disposed on the main body of the bending machine; the gear of the transmission being engaged with the rack such that the main part will be displaced along the guide rails when the first power source operates;

15       a second power source fitted to the main part; the second power source having a plurality of output rods;

        a plurality of second parallel guide rails secured on the main body of the bending machine;

        an auxiliary fixing member joined to the output rods of the second  
20       power source and displaceable along the second guide rails;

        a locating rod secured on the machine main body; the locating rod having engaging teeth formed along two lateral sides thereof;

        an engaging device fitted to the fixing member for releaseably

engaging the toothed locating rod to fix the fixing member to the locating rod; the engaging device including:

- (1) a pair of pushing bars pivoted to the fixing member at lower end portions; the lower end portions of the pushing bars having eccentric  
5 convexly curved portions facing each other;
- (2) a third power source connected to upper end portions of the pushing bars for changing distance between the eccentric convexly curved portions of the pushing bars with; and
- (3) a pair of engaging blocks movably arranged between the eccentric  
10 convexly curved portions of the pushing bars and on two sides of the toothed locating rod; the engaging blocks having engaging teeth facing the engaging teeth of the locating rod; the engaging blocks being capable of engaging the locating rod when the pushing bars are moved such that the convexly curved portions thereof press the  
15 engaging blocks against the locating rod; the engaging blocks being capable of disengaging the locating rod when the pushing bars are moved such that the convexly curved portions are away from the engaging blocks;

thereby being capable of being displaced by means of the second  
20 power source in addition to the first power source when the engaging blocks engage the locating rod, and when the second power source operates.

2. The feeding mechanism as claimed in claim 1, wherein each of

the second and the third power sources is a hydraulic cylinder.

3. The feeding mechanism as claimed in claim 1, wherein the second power source is a combination of two hydraulic cylinders.

4. The feeding mechanism as claimed in claim 1, wherein the  
5 auxiliary fixing member has:

two cavities thereon;

slide blocks fitted in respective ones of the cavities and fitted on  
respective ones of the second guide rails; and

a fitting projection thereon; the fitting projection having a plurality  
10 of fitting holes; the output rods of the second power source being  
respectively joined to the fitting holes.

5. The feeding mechanism as claimed in claim 4, wherein the  
auxiliary fixing member has two downwards extending parallel board  
portions with a holding space provided in between for holding the  
15 engaging blocks of the engaging device therein, and the third power  
source includes a plurality of hydraulic cylinders, and the engaging  
device further has:

(1) two pivotal blocks connected to respective ends of the third  
power source;

20 (2) a plurality of springs each fitted to cavities of inward sides of  
the engaging blocks at two ends for biasing the engaging blocks away  
from the engaging teeth of the locating rod; the engaging blocks having  
concavely curve portions facing respective ones of the eccentric

convexly curve portions of the pushing bars; and

(3) a supporting plate joined to lower ends of the down extending board portions of the fixing member to support the engaging blocks thereon;

5        each of the board portions being formed with two pivotal holes, and a gap between the pivotal holes thereof; the board portions being fitted onto the toothed locating rod at the gaps thereof;

two holding through holes right above and communicating with the holding space;

10        the pushing bars of the engaging device being respectively passed through the holding through holes of the fixing member, and pivoted to the pivotal holes of the down extending board portions at the lower end portions; the pushing bars being respectively pivoted to the pivotal blocks at the upper end portions such that the third power source can  
15        change distance between the eccentric convexly curve portions of the pushing bars when being in operation.